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ABSTRACT

This practitioner file is designed to provide information for adult, career, and vocational educators who have little or no experience using the Internet. Discussed first are the history of the Internet's development and its content and scope. Ways of obtaining an Internet connection are described. Next, annotated descriptions of eight sources of basic information about using the Internet are provided. Procedures for accessing the ERIC database on the Internet and for using various Listservs of relevance to adult, career, and vocational educators are detailed. Examples of the types of information available on the Office of Educational Research and Improvement's Gopher Server are provided. Presented next are a glossary of terms related to computer networks and an annotated bibliography of nine electronic journals of interest to adult, career, and vocational educators. The following issues of concern to educators are discussed briefly from the standpoint of the Internet: access and equity, education, communication styles, privacy and security, and information overload. The importance of addressing electronic mail correctly is highlighted. (MN)

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ED 372 193

ERIC Clearinghouse on Adult, Career, and Vocational Education

Practitioner File

DEMYSTIFYING THE INTERNET

So what is the Internet and why is everyone talking about it? In reality an international network of networks, the Internet is constructed by groups of institutions getting together and contributing to or forming their own regional networks. Collectively, these networks join universities, school systems, businesses, government agencies, and numerous other groups worldwide (Eisenberg and Ely 1993).

These networks are based on TCP/IP (Transmission Control Protocol/Internet Protocol). Originally a U.S. Department of Defense (DOD) standard protocol, TCP/IP is one indication that the Internet originated as a DOD network approximately 20 years ago. Following almost exclusive use by the military research community from the mid-1970s to the mid-1980s, the Internet became the domain of academic computing professionals. From the mid-1980s through the early 1990s, universities began to group together to form regional networks that in turn were connected to the Internet. During this period, the National Science Foundation (NSF) provided funding support for supercomputing centers and regional networks. The NSF networking efforts were important because they opened up access to the network beyond the research community. Since the early 1990s, a variety of electronic networks have developed connections, and the Internet has become accessible to users beyond the research and academic communities (Gates 1993). Most of the new users are not the government officials, researchers, and academics for whom the Internet was designed, but are members of the general public, including school children and adults from many professions (J. Seabrook, "My First Flame," *New Yorker*, June 6, 1994).

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ONLY CONNECT—GETTING ONLINE

Getting up to speed on the Information Superhighway (the last time we'll use this metaphor—promise!) requires the following:

- A computer, modem, and telecommunications software
- Knowing how to connect to and communicate with a computer linked to the Internet
- Knowing how to use and access Internet resources

(Eisenberg and Ely 1993)

There are a number of ways to find an Internet connection: (1) your organization may be connected; (2) you can dial up to local systems such as Freenets; (3) many state and regional networks offer connections, especially for educators (e.g., SENDIT in North Dakota and TENET in Texas); and (4) commercial vendors provide Internet connections, e.g., Prodigy, America Online, CompuServe, GEnie or entrepreneurial providers such as Central Ohio Internet Link (local only) or the Boston-based DELPHI (national). Commercial providers usually charge monthly fees ($15-$100) plus hourly charges ($2-$4); some offer only partial access to Internet resources (e.g., e-mail and bulletin boards, but not file transfer). The books by Krol and LaQuey (see bibliography) give details on the various providers of Internet connections.

Four important Internet services are electronic mail, Telnet, File Transfer Protocol, and client/server systems such as Gopher (see glossary).

THE P-FILE: WHAT'S IT ALL ABOUT

The Internet has quickly become something of a phenomenon. Probably no other technological innovation has changed the way people communicate and access information. According to current estimates, more than 23 million people worldwide access the Internet on a regular basis. Despite the fact that the Internet is rapidly becoming the communication means of choice for many individuals, others are either unaware of this medium, have no access to it, or have no interest in using it. This issue of the ***P-File*** is designed to provide information for adult, career, and vocational educators who have little or no experience using the Internet. The following staff members at the ERIC Clearinghouse on Adult, Career, and Vocational Education developed this issue: Susan Imel (**imel.1@osu.edu**); Sandra Kerka (**kerka.1@osu.edu**); and Judy Wagner (**wagner.6@osu.edu**). Requests for general information about ERIC/ACVE and its resources can be sent to the Clearinghouse e-mail address: **ericacve@magnus.acs.ohio-state.edu** or by mail to ERIC/ACVE, 1900 Kenny Road, Columbus, OH 43210-1090.

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DEMYSTIFYING—from p. 1)

Although the Internet is used most frequently for e-mail communication, other uses include providing access to bulletin boards, mailing lists (known as *listservs*), and informational and interpersonal resources. It is these informational and interpersonal resources that make the Internet such a veritable treasure trove, but finding exactly what is available can still be a "hit or miss" proposition. Fortunately, staff at several universities have "created user-friendly tools that can help you to search interconnected Internet domains and find information in ways other than by chance" (Harris 1993, p. 17).

Gopher, developed at the University of Minnesota, is the best known of these tools. A user-friendly, menu-driven information organizer, Gopher is designed to *go for* the desired information without the requestor having to know where it is going. Many Gopher sites are directly accessible and open for public use through the Internet but to use a Gopher, you must either have Telnet capabilities or a Gopher site must be operating on the computer where your account is located (ibid.).

No tool of the information age has increased access to previously inaccessible resources more than the Internet. According to Eisenberg and Ely (1993), "this is a time in which the ability to ask the right questions is more important than having the right answers" (p. 6). The secret to the Internet's rapid ascent is this: by connecting networks worldwide, it provides access to databases, libraries, interpersonal resources, and other materials that can provide the right answers.

* *

Annotated Bibliography

Eisenberg, M. B., and Ely, D. P. "Plugging into the 'Net." ***ERIC Review*** 2, no. 3 (Winter 1993): 2-10. Explores the educational benefits of computer networks, provides the basics of getting started, and describes networks with offerings for teachers and students.

Gates, R. "The Culture of Net Navigation." ***Electronic Library*** 11, nos. 4-5 (August-October 1993): 335-345 (EJ 471 089). Covers the history of Internet development, adding information to the network, guidelines for network behavior, and learning to use the networks.

Germain, J. M. "ERIC Goes Internet." ***Online Access*** (January-February 1994): 50-61. Explains how to use the Internet to access ERIC and provides guidelines for searching the database online.

Giguere, M. "The Internet: A Selective Annotated Bibliography of Print Materials." ***Education Libraries*** 17, no. 2 (Summer 1993): 13-20 (EJ 469 142). Describes introductory materials to the Internet including guides, directories, general information, applications, and Internet tools.

Harris, J. "Networked Information Location Tools: Gophers, Veronica, Archie, and Jughead." ***Computing Teacher*** 21, no. 1 (August-September 1993): 16-19. (EJ 469 255). Provides brief descriptions and directions for using the four free tools designed to locate electronic information resources on the Internet—Gopher, Archie, Veronica, and Jughead.

Krol, E. ***The Whole Internet: User's Guide and Catalog. 2d ed.*** Sebastopol, CA: O'Reilly & Associates, Inc., 1994. A book on the Internet for those who want to use the network but do not want to become a professional networker. Includes a minimum of background material while focusing on the tools for using the Internet.

LaQuey, T. ***Internet Companion Plus.*** Reading, MA: Addison-Wesley, 1993. Subtitled "A Beginner's Guide to Global Networking," offers basic information on getting started with Internet.

Levine, J. R., and Baroudi, C. ***The Internet for Dummies.*** San Mateo, CA: IDG Books, 1993. Part of a series (***DOS for Dummies, Windows for Dummies***, etc.), this volume explains computer networking in plain English.

These sources provide basic information to help you get started. The computer section of your bookstore has many other books on the Internet that contain more detailed information.

ERIC ON THE INTERNET

AskERIC is an Internet-based question-answering service for teachers, library media specialists, researchers, administrators, and others involved in education. AskERIC offers fast, individualized responses to education questions. For information about any aspect of education, send an e-mail message to: **askeric@ericir.syr.edu**

The AskERIC Electronic Library is a file of resources on an FTP/Gopher site that includes lesson plans, resource guides, reference tools, full-text ERIC Digests, and searches on popular topics.

To access the AskERIC Electronic Library, Gopher to **ericir.syr.edu** (port #70) and move through the directories:

Other Gopher and Information Servers/
North America/
USA/
General/
AskERIC-(Educational Resources Information Center

If you don't have Gopher:

Telnet to **ericir@syr.edu**
Log in as directed (usual login is 'gopher')
Access the National Gopher System
Move through the directories as above

Internet Access Points to ERIC is a list of instructions for connecting with systems that provide Internet access to the ERIC database. To get this list, contact the ERIC Clearinghouse on Information & Technology (800/464-9107 or **askeric@ericir.syr.edu)** or ACCESS ERIC (800/538-3742 or **acceric@inet.ed.gov**).

ERIC/ACVE material is available in a number of places on the Internet. Our Digests are included in the ERIC Digest file and our Trends and Issues Alerts are listed on the first menu.

LISTSERVS

"Listserv" is actually a program that maintains or administers a mailing list (other mailing lists may be administered by a person). However, people often refer to the mailing list itself as a listserv. The procedure for subscribing to all listserv-administered mailing lists is the same. Send a message to listserv@(whatever the extension is for that group—the part that appears **after** the @). For example, **listserv@uregina1.uregina.ca.** Leave the subject line blank. The body of the message should be as follows: subscribe (name of listserv) first name last name. For example, **subscribe adlted-l mary smith**

To post or reply to messages on a listserv, address your message to the name of the listserv. For example,
To: **adlted-l@uregina1.uregina.ca**

ADLTED-L: Canadian Adult Education Network **adlted-l@uregina1** (Bitnet) or **adlted-l@uregina1.uregina.ca** (Internet). A broad worldwide discussion group.

AEDNET: Adult Education Network (**aednet@alpha.acast.nova.edu**). Focuses on discussions of topics of interest to adult and continuing educators.

BUSED-L: (**bused-l@uregina1.bitnet**). Focuses on business education including basic business, technology, curriculum, teacher education, reviews, project ideas.

DEOS-L: International Discussion Forum for Distance Learning **deos-l@psuvm** (Bitnet) or **deos-l@psuvm.psu.edu** (Internet). Promotes communication and disseminates information regarding distance education.

National Literacy Alliance: The NLA sponsors an electronic list to provide information on public policy issues affecting adult literacy education. This list is administered by a list manager that is not a listserv, so you subscribe by sending an e-mail message to **majordomo@world.std.com**

NBEA-L: National Business Education Association listserv (**nbea-l@akronvm.bitnet**). Designed to provide practitioners with ideas and feedback on topics related to business education.

PERKACT: **perkact@siucvmb** (Bitnet) or **perkact@siucvmb.siu.edu** (Internet). Issues related to the Carl D. Perkins Vocational and Applied Technology Education Act.

TECHED-L: (**teched-l@psuvm.bitnet**). Focuses on employment training and literacy.

TESLIT-L: Adult Education & Literacy Test Literature **teslit-l@cunyvm** (Bitnet) or **teslit-l@cunyvm.cuny.edu** (Internet). Focuses on issues of literacy and the teaching of English as a second language.

TRDEV-L: Training and Development (**trdev-l@psuvm.bitnet**). Stimulates research collaboration and assistance in training and development for the academic and professional communities.

VOCNET: **vocnet@ucbcmsa** (Bitnet) or **vocnet@cmsa.berkeley.edu** (Internet). A broad-reaching discussion of issues related to vocational education.

GO FOR INFORMATION ON EDUCATION

ERIC's federal sponsor, the U.S. Department of Education, Office of Educational Research and Improvement, maintains a Gopher Server that provides public access to educational research, statistics, and information about the U.S. Department of Education and its programs. Examples of the type of information available on the ED/OERI Gopher Service include the following recent additions:

- Full text of the report, ***Education Technology: Tools for Transforming Teaching and Learning***, a guide for those with interest in using technology to improve education for all students.
- A full-text searchable version of the ***Guide to U. S. Department of Education Programs***, a database that includes a brief description, contact office, and telephone number for over 240 programs sponsored by the Department.
- ***Recent Department of Education Publications in ERIC*** announcing the availability of selected new and recent documents, on topics of national importance, produced or sponsored by the Department.

Continuously updated with new press releases, grant announcements, publication summaries, and statistical datasets, the ED/OERI Gopher Server can be accessed by—

- Pointing your Gopher client software to **gopher.ed.gov** or selecting "North America → USA → General → U.S. Department of Education from All/Other Gophers in the World
- FTPing to **ftp.ed.gov** (logon is 'anonymous')

The ED/OERI World-Wide Web (WWW) server can be accessed by pointing your WWW client software to the Department's uniform resource locator: **http://www.ed.gov/**

If you have difficulty accessing ED/OERI, send a regular e-mail message to **inetmgr@inet.ed.gov**

Glossary

Bulletin board—A computerized forum allowing users to ask questions, offer ideas, and receive feedback, often organized around a topic of common interest. (Similar to **newsgroups**.)

FTP—File Transfer Protocol, which allows a user linked to one Internet host to access and transfer files from another host.

Gopher—Menu-based client/server software that provides flexible access to resources such as databases.

Listserv—A program that administers a mailing list on topics of common interest to which users can subscribe. More commonly used to refer to the discussion lists themselves.

MOSAIC—A hypermedia browser that enables users to move around in a document or from document to document across the network, integrating material from a variety of information servers (e.g., Gopher, WAIS, FTP) without changing applications.

Telnet—An Internet protocol enabling users at one site to log into and use the computer system of a host at another site.

Usenet—A network that supports public bulletin boards (or newsgroups) on which users can post and read messages.

WAIS—Wide Area Information Servers, client/server software that allows for a consistent approach to searching and information retrieval across various databases.

World-Wide Web—A hypertext-based system for finding and accessing Internet resources.

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E-JOURNALS OF INTEREST

Electronic journals are those that are available through various world-wide networks such as the Internet. Some are simply electronic versions of paper journals; others are published in electronic form only. Some electronic journals are pushing the boundaries of the form, allowing instant dissemination and commentary, criticism, and rebuttal. They are a type of merger of scholarly journal and discussion list that is changing the concepts of publishing and peer review. The following are some electronic journals of interest to adult, career, and vocational educators.

CATALYST: **listserv@vtvm1** (Bitnet) or **listserv@vtvm1.cc.vt.edu** (Internet). Electronic version of CATALYST, a refereed print journal for community college educators.

COLICDE: COL-ICDE Distance Education Research Bulletin (**colicde-request@unixg.ubc.ca**). The Commonwealth of Learning (COL) and the International Council for Distance Education (ICDE) are establishing an electronic bulletin board for the dissemination of information about research in progress or planned in the field of distance education, effective July 12, 1994.

DEOSNEWS: The Distance Education Online Symposium **listserv@psuvm** (Bitnet) or **listserv@psuvm.psu.edu** (Internet). The American Center for the Study of Distance Education at The Pennsylvania State University organizes DEOS and publishes the *American Journal of Distance Education*.

DISTED: Journal of Distance Education and Communication **listserv@uwavm** (Bitnet) or **listserv@uwavm.u.washington.edu** (Internet). The Online Journal of Distance Education and Communication covers formal and informal education, geographically disadvantaged learners, K-12, and postsecondary.

EDUPAGE: A News Update from EDUCOM (**edupage@educom.edu**). A newsletter summarizing information technology news. [Subscribe by sending a note to **edupage@educom.edu** with your name, institutional affiliation, and e-mail address.]

EUITNEWS: Educational Uses of Information Technology (**listserv@bitnic.educom.edu**). EDUCOM's newsletter for the EUIT program, encompassing distance learning, self-paced instruction, CAI, video, and other information technologies for teaching and learning.

HORIZONS: New Horizons in Adult Education (**listserv@alpha.acast.nova.edu**). A refereed journal transmitted to educators around the world via the AEDNET discussion list (see LISTSERVS). A list of back issues can be accessed by using the index command.

JOE: Journal of Extension (**almanac@joe.uwex.edu**). The peer-reviewed publication of the Cooperative Extension System covers all phases of Extension, including adult and distance education. The paper version is no longer published.

JTE-L: Journal of Technology Education (**listserv@vtvm1.cc.vt.edu**). A refereed journal that provides a forum for all topics relating to technology in education.

INTERNET: THE ISSUES

The explosion of computer networking, Internet and other, has given rise to a number of issues with which educators should be concerned:

Access and Equity. Many people are already "information have-nots," and rumblings about commercialization of the Internet could portend even greater divisions. Private control has the potential to limit free speech and diversity of viewpoints, which the current "anarchy" of the Internet tends to respect. The proposed National Information Infrastructure purports to encourage private investment while preserving and extending universal access.

Education. Many users or would-be users learn through trial and error. More systematic education in Internet use, especially for adults, is needed.

Communication Styles. Interacting with others via computer is somewhat different than in-person or telephone communication. Without the nuances of tone of voice and body language, miscommunication can occur. A recent *Newsweek* article also identified gender differences in computer communication styles (B. Kantrowitz, "Men, Women & Computers," May 16, 1994).

Privacy and Security. Concerns include unauthorized use of addresses and passwords; wide availability of personal information, sometimes without the person's knowledge; computer viruses.

Information Overload. The overwhelming quantity of information seems daunting, but Thomas Davenport ("Saving IT's Soul," *Harvard Business Review*, March-April 1994) suggests there is no such thing as information overload if the information is really useful. Again, education is the key to dealing with this embarrassment of riches.

Address Unknown: Don't Let It Happen to You!

Just like regular addresses, e-mail addresses are made up of a combination of elements that direct the message to the correct person and place. In a regular address, if you make a mistake or omit an element (such as the zip code), your mail is still likely to arrive at its destination. In e-mail addresses, however, the computer will not forward a message unless it is addressed exactly according to the address elements. For this reason, you must be very careful to make no errors when using or giving out e-mail addresses.

Example: **ericacve@magnus.acs.ohio-state.edu** is the e-mail address for the ERIC Clearinghouse on Adult, Career, and Vocational Education.

ericacve = the person or organization the message is going to

@ = separates the person/organization from the place

magnus.acs = the machine or network to which the message is going

ohio-state = the institution or the place for delivery

edu = type of institution (common ones are edu for education, gov for government, and com for commercial businesses)

All parts of the address are separated by a period. There are no spaces. If a space is needed, the underline _ is used. Some addresses are upper/lower case sensitive but others are not. When in doubt, type the address exactly as it was given to you or try using all upper or lower case letters rather than mixing them. If your message is undeliverable as addressed, generally your network machine will tell you and you can check to see if you entered it correctly.

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